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THE MUSHROOM GROWERS'
ASSOCIATION

MGA
BULLETIN

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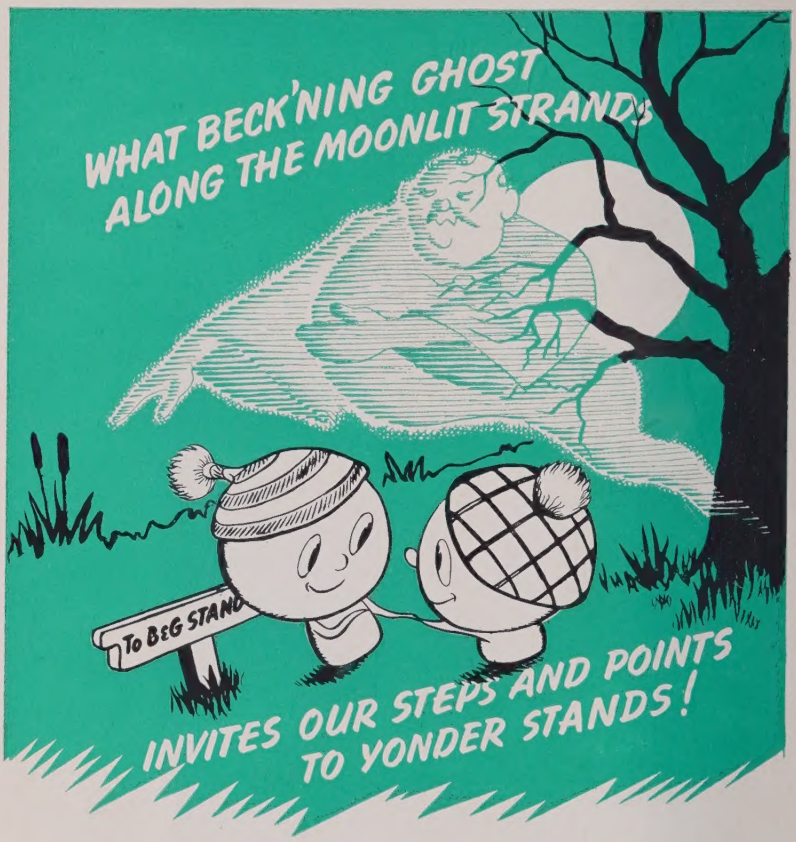

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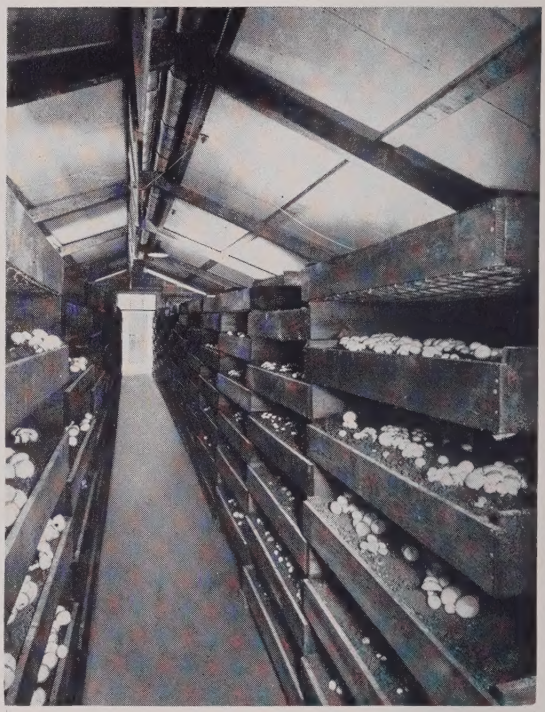

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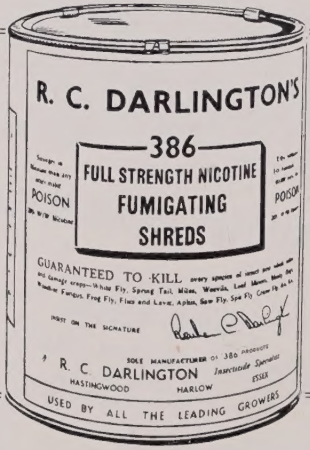

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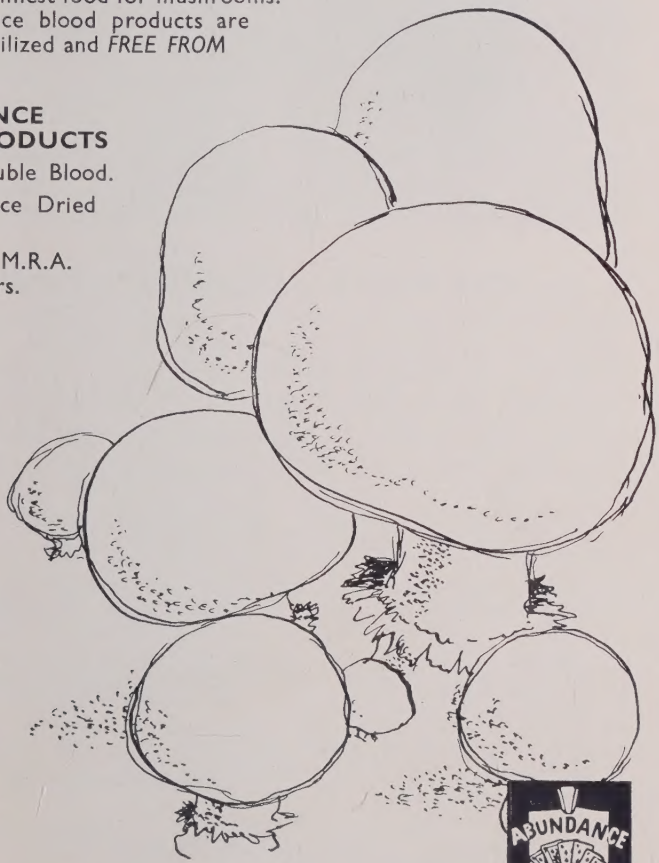

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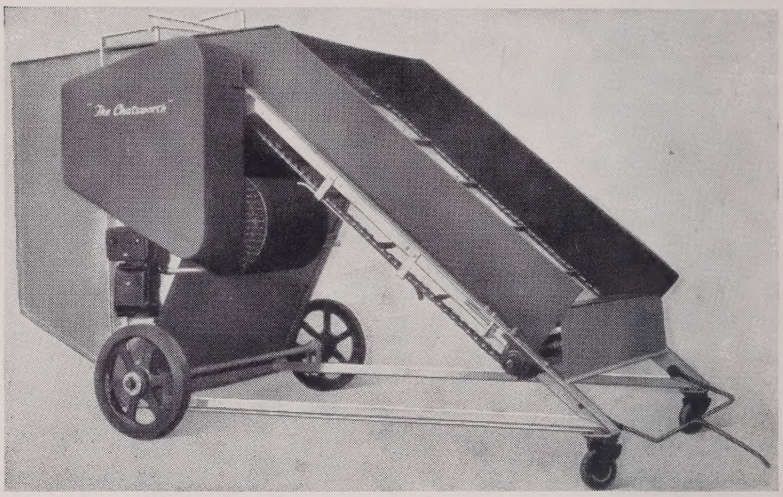

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The
MGA BULLETIN

JANUARY 1953
NUMBER 37

EDITORIAL:

TEN YEARS AGO

Close on Christmas Day, 1942, a long letter reached me from a stranger describing himself as "Stanley Middlebrook—Modern Mushroom Culture." In this historic letter appeared these words: *I seek only to meet bona fide mushroom growers whose enthusiasm for the job is a guarantee of live, interesting and useful discussion. It has been my good fortune to discover two or three growers at remotely distant points of the country who take the business seriously and who not only seek but seem to enjoy (as a kind of mental relaxation) discussions on this sometimes encouraging, sometimes tantalising, but always fascinating topic.*

This indefatigable gentleman went on for several pages mentioning problems he wished to talk over. "On all these, and hundreds of other points, I have my opinions. So have you. The unfortunate fact is that these opinions have to be bottled up, in the absence of anyone capable and willing to discuss them .... Though I don't know you, I would like you to realise that if at any time you have to come up North, I should be delighted if you would call round this way to have a look at my place."

I have described this as an *historic* letter. I used the correct adjective. Though I failed to respond immediately to his compelling enthusiasm, we met later and, with Major C. P. Whitaker, C. L. Sinfield and J. G. Hughes, launched the MGA, the MRA and the MGA Bulletin.

I take this opportunity, just ten years later, of acknowledging the Mushroom Industry's indebtedness to a unique and delightful personality and to place on record an astonishing fact which only those who know him will believe. This letter was the first of 1,473 letters I have received from him—and still they come!

Seasonal Greetings to you all .....

Fred C. Atkins.

Members' Wives reveal their....

Favourite Mushroom Recipes

1.—Mrs. Fred. C. Atkins

I find grilled mushrooms much more tasty than fried, and I always add mushrooms to stews and re-heated meat dishes. Here are my three favourite ways of serving mushrooms.

Hors-d'œuvre *

Allow 2 mushrooms for each person. Soak in cold water for about 5 minutes, then wash two or three times. Do not peel or stalk. Slice thinly. Chop 1 clove of garlic very fine, add to the sliced mushrooms and mix well. Add ½—1 tablespoon salt, 1 tablespoon distilled vinegar, and pepper to taste. Lastly, add 2 tablespoons oil and mix well. Serve with quartered hard-boiled eggs, sliced tomatoes, and anchovy fillets.

Mushroom Soup à la Viennoise †

Slice 1 lb. mushrooms, and put in a saucepan with 2 oz. butter, 1 chopped medium-sized onion, and simmer very gently for 10 minutes, but without browning. Then add 1 or 2 quartered tomatoes and cook till quite soft. Add 1 gill of boiling water and simmer for 20 minutes. Rub all through a sieve, put the purée in a saucepan, with the liquid in which the mushrooms, onion and tomatoes were cooked, and dilute to the right consistency with boiling cream, seasoning with salt and pepper. Stir well, and simmer for another 5 minutes.

Stuffed Mushrooms served with Roast Beef ‡

12 extra-large mushrooms
4 tablespoons olive oil
2 tablespoons chopped parsley
2 tablespoons chopped onion
½ clove garlic, chopped fine
salt and pepper
fine breadcrumbs

Wash and peel the mushrooms. Remove the stems. Place the caps upside down in a pan greased with 2 tablespoons olive oil and fry gently until they are light brown. Meanwhile, put the rest of the oil in a saucepan with the herbs and the stems of the mushrooms, finely chopped. Cook 2 minutes. Season with salt and pepper and add enough breadcrumbs to make a thick stuffing. Fill each cap with the stuffing, sprinkle with breadcrumbs, and bake in 375° F. oven for 20 minutes.

*Given me by André Sarazin.
†*Mushroom Recipes*, by the Countess Morphy (Herbert Joseph Ltd.).
‡*Tante Marie's French Kitchen*, translated by Charlotte Turgeon (Nicholas Kaye).

PEAK HEATING IN TRAYS FOR SHELF CULTURE

" Why do owners of shelf bed farms not simplify their Peak Heating problems by a partial adaptation of the tray growers methods ? " asks **Major D. A. Wilson.** He continues :

Surely on farms (shelf bed) with more than 10-12 standard size growing huts (36 ft. by 18 ft.) it would be a paying proposition to have a small (18 ft. by 12 ft.) hut in which the compost was stacked in trays and peak-heated prior to being taken to the growing hut and turned out on to the beds ?

The *advantages* seem to be :

1. A Peak Heating Hut built next to the boiler house requires less piping to be installed in the other huts as a maximum temperature of only 65 degrees will then be required in the growing huts at any one time. This should show a saving in fuel.
2. Less volume of air to be peak heated would also show a saving in fuel.
3. Better and easier control of humidity.
4. Less loss of moisture and less risk of certain sections of the compost being partially dried out.
5. The shrinkage of the compost during peak heating would be partially if not wholly offset by the subsequent turning and spreading on the beds.
6. The compost would receive an added aeration and would be more lightly packed on the shelves.
7. One peak heating hut would serve a large number of growing huts as it would only be used for that purpose and not for spawn running.
8. A growing hut could be allowed to crop for 3-4 more days (per crop) with a slight but not negligible increase in yield in pounds per square foot, probably $1\frac{1}{2}$—2 per cent.
9. A more " even " peak heating of the total volume of the compost should give a more uniform crop throughout on top and bottom shelves.
10. Quicker cooling down of the compost because of the aeration and extra turning would enable earlier spawning.

The cumulative effect of these advantages should undoubtedly give a higher average yield which should easily outweigh the few *disadvantages :—*

1. The cost of erection of the Peak Heating Hut.
2. The cost of one set of trays.
3. The additional manhours required to move the compost from the turning shed into the heating room and from there to the growing huts.

To me it appears as if one of the better features of the tray system could be partially incorporated by the shelf growers. Unfortunately I have as yet not the facilities for trying it out on a large scale. But perhaps some of the expert growers have already tried this out and can give me (a beginner) their valued and considered opinion and advice ?

THE CULTIVATED MUSHROOM

6—DEVELOPMENT

By ANDRÉ SARAZIN

As soon as the first mycelial strands reach the casing soil, they grow into it and produce along their course or at the tips of their branches minute nodules (Fig. 1). These nodules are the first indications which the grower looks out for on the surface of the casing soil of his beds.

These nodules are to him very important ; on their very appearance, on their method of formation and their distribution depend in fact the mushroom grower's diagnosis of the health of his beds and the treatment required for them, in terms of aeration and irrigation.

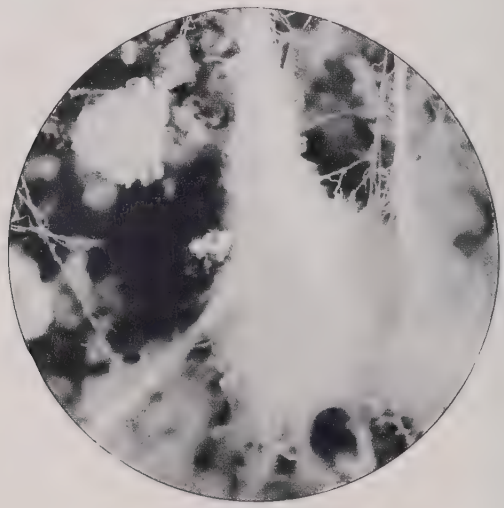

FIG. 1. Nodule at tip of mycelial strands. x 35.

Each nodule, which is made up of hyphae collected together into a pellet, grows and becomes organised into a miniature mushroom called a pin-head. About the middle of this oval silky cocoon there is formed on the outside a furrow which delineates the stalk from the cap and on the inside of this structure there is formed an encircling cavity in the midst of the plectenchyma (Hein, 1930).

Microscopically, the parallel hyphae in the stalk become curved in the cap to end in the roof of the cavity and become grouped there in a parallel series. During the growth of the little carpophore the roof of the cavity becomes thrown into folds to form the first rudiments of the future hymenium, but it is not until it reaches about 2 cm. that the

hymenium-bearing gills become sharply differentiated. At first they form coarse ribs but later these become attenuated and ultimately assume the characteristic shape described in a previous article. It is not known under what influence the hymenium becomes organised in the mass of plectenchyma which forms the young carpophore.

During the development of the carpophore the stalk grows in length, and the cap, which is at first spherical, spreads out and becomes flattened. The floor of the hymenial cavity becomes progressively thinner to form the veil which ruptures when the carpophore reaches maturity.

An interesting feature of the development of the carpophore consists in the presence, at the junction of the stalk and cap, of a zone of active growth which ensures simultaneously the elongation of the stalk from top to bottom and the increase in volume of the cap in a centrifugal direction starting from this zone. If equidistant points are marked along the vertical length of the carpophores the only intervals which grow significantly are those which occur in the neighbourhood of the junction of the stalk and cap. When these intervals are further sub-divided along the vertical extent of the carpophore the same phenomenon is repeated indefinitely. The grower can ascertain this for himself perfectly if he examines a mushroom which has opened on the bed with its cap spread out ; he will see that the membranous ring which at first indicated the point at which the stalk joins the cap is nearer the lower than the upper end of the stalk.

The rate of growth of the carpophores is accelerated by a high temperature and is retarded by a low temperature. On the average, a pinhead measuring several millimeters requires about 6 days at 18° C., 10 days at 14-15° C., 20 days at 10° C. to become a carpophore fit to be picked. The surrounding temperature also influences the shape of the mushroom; generally speaking, for a given variety, *at a high temperature, the cap is thin and flat and the stalk long and slender, whereas at a low temperature, the cap is spherical and bulky and the stalk is short and stocky.*

Different factors influence the growing zone. Among physical factors must be listed ultra-violet light, which has been observed by me to cause considerable elongation of the stalk and atrophy of the cap which is most of the time sterile. Among chemical factors Lambert (1933) has recorded that the accumulation of carbon dioxide above a concentration of 1% provokes analogous deformities, that is to say a tendency for the carpophores to form long stalks and small caps. The grower has, moreover, observed for a long time that in a cave which is not ventilated the mushrooms ' sulk ' and have soft stalks which are exaggerated in size relative to the cap. And lastly, it is noteworthy that a disturbance of a certain type can occur during the growth of the carpophore ; under the influence of volatile substances from materials containing a mineral oil base a supernumerary hymenium which is polyporoid can partly occupy the upper surface of the cap (in English-speaking countries this is termed Rose Comb Disease) and the distorted carpophore is sometimes unrecognisable. Amongst the most typical and current monstrosities may be cited :

1. Papilliform configuration of caps whose upper surface is covered with warts.

2. Coalescence, in which two carpophores become joined together either by the stalk or by the cap.

3. Fasciation, in which the mushroom has a flat stalk arising from the complete fusion of the two carpophores.

4. Superposition, in which one mushroom grows on top of another. Sometimes the cap of the mushroom which is superimposed rests on the cap of the other ; this phenomenon is more or less explained as being a premature fusion of two caps belonging to two carpophores one of which in the course of growth has pulled the other one upside down.

FIG. 2.

When the carpophore has reached maturity the veil ruptures and the hymenium-bearing gills shed a dark brown powder which is made up of innumerable spores (Fig. 2). The method of formation of the spores has already been noted ; the operation by which they are shed should now be considered. Buller (1922, I & II) has shown in minute detail that they do not fall off the basidium but are shot off. A drop of fluid is formed at the point of the sterigma to which the basidiospore is attached by its hilum and the spore is forcibly projected from the sterigma. But the sterigma does not become ruptured nor does it allow any fluid to escape, the projection of the spore being due apparently to a sudden jerk and not to a jet of fluid such as has been observed in the case of ascospores in ascomycetes. The two basidiospores are expelled separately (Fig. 3),

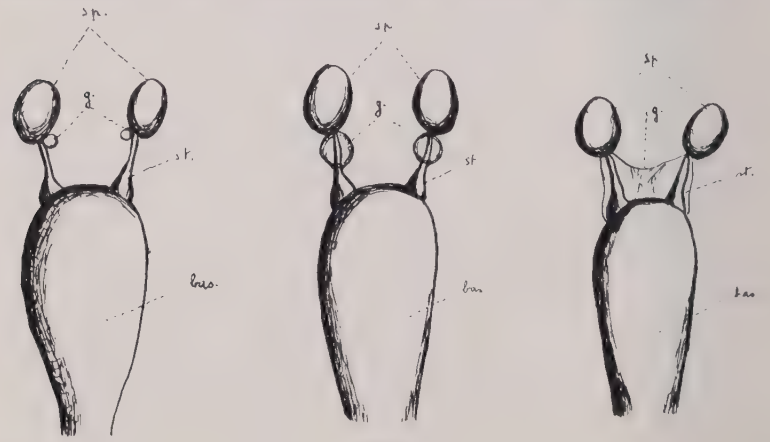

FIG. 3.

but sometimes the two structures become confluent and the two basidiospores are projected together. The trajectory force is however very feeble as the horizontal trajectory does not reach more than a tenth of a millimetre beyond the hymenium-bearing gill. The spore then falls passively at the rate of 1 mm. per sec. and is more or less deviated in its fall by the slightest air current. Their projection from the gill results in preventing the spores (which are very adhesive) from sticking to the hymenium. According to Buller, they have a density of 1·2, and a mushroom 8 cms. in diameter is capable of shedding one thousand three hundred millions of basidiospores at the rate of 40 millions an hour.

These figures are impressive but, in the face of the difficulties encountered in the course of germination, what a waste it is on the part of Nature ! It is possible that the dispersal of strains of the cultivated mushroom is effected by these spores which are carried by the wind, but it is practically impossible to bring about their germination in media where ' virgin ' spawn is found, as in old abandoned compost heaps. In such situations the cultivated mushroom survives, producing annually under favourable atmospheric conditions (in Spring and Autumn) numerous carpophores.

Mushroom spawn although viable is very delicate ; the intense frosts and severe dessication of intense summer heat gradually destroy the mycelial threads almost completely. Indeed, it is plausible to explain the survival *in situ* of the cultivated mushroom by means of the germination of the chlamydospores (Fig. 4) recorded in pure culture by Kligman and re-discovered by me in their typical form in the depth of the bed at the close of the fruiting period. In fact these chlamydospores are tough and furnished with very thick walls and are truly vegetative cysts containing a wealth of fatty reserves. As soon as the climatic conditions favourable to the vegetative cycle begin to fail they are produced at the ends of threads whose growth is aborted. They are capable of germinating and producing a normal fertile mycelium. In conclusion, the cultivated mushroom has recourse to two methods of survival and propagation and it remains for further studies concerning the developmental cycle to reveal how new races are produced.

Fig. 4. Chlamydospore. x 1,000.

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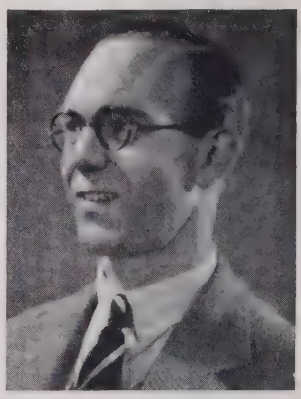
Lambert, E. B., 1933. Effect of excess carbon dioxide on growing mushrooms. J. of Agric. Res. 47, 8.
Buller, A. H. R., 1909 ; 1922. Researches on Fungi, I & II. Longmans, Green & Co., London.

Monsieur André Sarazin writes to suggest that the second paragraph on p. 284 of September Bulletin 33 would be more easily comprehended if he had written: " It is at this stage that the mycelium is propagated in a variety of sterilized media, to be used later by mushroom growers for spawning their beds."

W. A. B. Harding urges us to . . . . . .

DOUBLE THE MGA MEMBERSHIP

" THE ALTERNATIVE IS UNPALATABLE "



At the Annual Meeting there was extended discussion on the need for more members. Personal contact was generally considered one of the best means to this end, and undeniably it would be of the utmost benefit to have a full-time officer to visit growers. But first things first; we must first obtain additional income, and I contend that **increased membership is the only solution.**

A higher subscription income would enable us to engage a full-time assistant secretary to man the 'phone and look after routine matters at the office, and our Secretary could be given a roving commission to supply that human contact between H.Q. and mushroom growers, especially non-members.

Until subscription increases to the necessary extent, there has been a suggestion that, in certain localities, members should be provided with a list of neighbouring non-members and be asked to call upon them for the purpose of explaining the benefits of MGA membership. Postal contact is apt to be disregarded, even relegated to the WPB; but a friendly talk and an interchange of ideas (the essence of the Association) have much more chance of leading to the signing of the enrolment form with which the visiting member could be armed.

One of the Area Groups has such a plan already. In its own comprehensive list of mushroom growers there are 200 non-members out of a total of 300. Could not this policy be intensified? Group Committees could be set up to carry it out instead of the MGA relying upon the enthusiasm of individual members as at present.

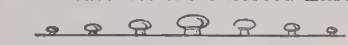
That this is a solution to our problem is the conviction of several members who have been giving the matter intensive thought. **The unpalatable alternative is to raise the subscription rate,** to which the small grower might react unfavourably, as he is under the misconception that his subscription is expensive enough already, although it is HE who causes the MGA the most work and who gets the greatest value from the Association.

He appears to ignore the wealth of information available through the Bulletin alone, apart from the numerous functions which enable him to meet other growers for discussion of problems and interchange of ideas. Coupled with the library, the information bureau, and advice on innumerable aspects of the industry, everything is available except a ready-made crop which, from the attitude of some people, would

seem to be requisite to justify a paltry four guineas. I ask them: What other institution on a *national* basis gives so much for so little?

Strangely enough, mushroom growing appears to be regarded as an industry which can be entered into blithely by (a) blatantly calling on a grower and expecting him freely to give up hours of his valuable time and information, and then (b) expecting to set up in a venture involving high production costs on a comparatively minute capital out of which four guineas invested in the comprehensive service provided by the MGA would apparently spell ruin.

A travelling Secretary would be able to bring these truths home to misguided non-members. To enable the Secretary to travel, a higher membership income is essential. An immediately doubled membership roll is easily within our compass and would make this desirable dream a reality. It can be achieved simply, by each member enrolling just one new member in 1953. Please use the enclosed Enrolment Form.



NEW (NOVEMBER) MGA MEMBERS

Eades, Miss G. Wallace, Noël Terese Nursing Home, Limura, Kenya, East Africa.
Hadorn, E., Champignon-Zentrale, Zurich, Switzerland.
Hayward, W. T., Twisden Cottage, Mill Pond Lane, Tenterden, Kent.
Homer, C. H., 139 Waterfall Lane, Blackheath, Staffs.
House, Charles, Hill Place, Swanmore, Southampton, Hants.
James, J., Glyn Peris, Llanon, Cardiganshire.
Mason, Douglas, 18 Eighth Parade, Golf Links Estate, Southall, Middlesex.
Slack, C. Irving, Slack Brothers, Waterloo, Quebec, Canada.
Wishart, J., 81 Runley Road, Luton, Beds.

(*Italics indicate Honorary Membership*)

Register of Exporters: The names of growers and others who are in a position to export horticultural goods to Canada can be printed free of charge in a proposed Register being prepared by Mr. R. S. Hunt Taylor for the Federation of British Industries, 41 Buckingham Palace Road, London, S.W.1., to whom inquiries should be addressed.

CORRESPONDENCE

May I use the medium of your excellent bulletin to " render unto Cæsar the things that are Cæsar's "? It will be agreed that some of the most important factors in mushroom growing are composting, synthetics, the reduction of capital expenditure by the tray system, improved spawn, and fungicides. In each of these fields I feel deeply beholden to **Dr. J. W. Sinden** of the Pennsylvania State University. His research or advice have made a considerable difference to the prosperity of my undertaking. I sometimes wonder whether the followers of his research —both practical growers and research workers—have not sometimes failed to acknowledge the source of some of their inspiration. I am anxious to be on the side of the angels in this respect.

R. DUTHY.

Mr. Duthy is surely under a misapprehension? When Dr. Sinden visited England in 1948, at the invitation and expense of the MGA, he was officially welcomed by the Executive Committee and elected a Life Honorary Member—the highest honour the MGA can bestow.

—EDITOR.

Stanley Middlebrook's Diary

Nov. 15. Good morning, nice Macroclimate! I promised to relieve your minds about Micro- and Macroclimate. It would be easier if mine had been relieved. I am told that if ever I'd reached the fourth form at school I should know the answer. " Had you ever acquired any elementary knowledge," writes my informant, " you would know that Microclimate of the casing soil, for example, refers to the air, water, etc., *within* the soil and that the Macroclimate is the humidity, air movement, etc., immediately *above* the soil (i.e. the atmospheric conditions in the house)."

Nov. 16. Recently the *Sunday Express* organised a competition for Party Menus and on Nov. 9th the winners were named. Each menu contained mushrooms, one as stuffing for roast hare, one as garnishing for cream soup, and one with veal sweetbreads.

Nov. 18. I don't think I shall be accused of modesty when I say that in my opinion I am probably the best grower in the country, whether on shelves or trays. I hear many reports of excellent production but I'm certain that my experience and ability enable me to grow bigger quantities and far better quality than anyone. Increasing evidence from all over the British Isles supports my contention. Furthermore, I state categorically that contrary to general experience and accepted theory I can produce better in winter than in summer, spring or autumn. Despite my efforts to encourage others to improve their crops I am constantly compelled to admit that no one achieves my level of success. I am producing so superlatively well that I'm a little worried by my superiority. If it lasts, pride must have a fall.
Anyone who thinks his production is better than, or even equal to mine is invited to come and see for himself what astounding crops I grow here. Nothing will be hidden from the genuine grower, if he's an MGA member. I make no apologies for these extravagant claims because I know I am the best grower—of *Dactylium.*

Nov. 19. *Dactylium!* We're full of it—and *Geotrichum!* We observe that the former seems to follow and grow on the latter. These two diseases have several similarities. Both turn pink at some stage; both sit on the surface of the soil like a skin and can be peeled off; both look very much alike at their first appearance; both are a mistake on a mushroom farm. On the other hand *Dactylium* attacks the mushroom while *Geotrichum* doesn't; and under the microscope the two are quite different. ' *Dactylium* ' is not apparently an accepted scientific name—the disease is in fact an imperfect form of *Hypomyces rosellus.* " Rosellus " suggests pink rosettes. I wonder if this fact combined with the above similarities suggests that the two are more closely related than we think.

Nov. 20. Some people use a screen of trees to protect their houses from draughts in a windy area. Others remove trees to permit plenty of air movement and cut out fly harbourage. The vast majority don't think of either. They're lucky.

Nov. 22. The last brick house I built has an Asbestolux false ceiling, topped with bitumen-bonded Fibreglass. Judging by one crop only, it seems to be the driest house on the place. How much of this could be due to the moisture absorbing quality of the Asbestolux? Certainly there has been no condensation thereon, never those thousands of droplets one so often sees on asbestos roofs. But it's only *one* crop; maybe the compost was too dry. At any rate it has been most difficult to retain soil moisture—in fact we rather failed to do so.

Nov. 23. I have been looking up some old diary notes made in 1942—some years before the MGA members had the benefit(?) of my experience. One item dealing with composting and supported by a diagram of results stated that the best results were obtained from composts that were started dry and finished very wet, and the worst from a wet start and dry finish. Crops between these extremes fitted nearly exactly into place on the graph. Had the Diary been published in those days I should have been recommending a method which to-day is completely reversed. Would he be a bold man who suggested it might not matter either way? I have said wilder things! One being, perhaps, that soil is more important than compost.

Nov. 24. I am negotiating for some Cotswold rickstaddles to place at our entrance. They tend, as we know, to look rather like " flats," but they would be a happy introduction to the place even if they were fairly representative of the quality we try to avoid but too frequently produce.

Nov. 25. Further to my notes of Aug. 7th, Aug. 30th, Oct. 2nd, and the proud notes above re *Dactylium*, I must report that exactly the same pattern of progress continues. Since the first mention of the trouble, which commenced in June, *Dactylium* has grown on all beds where spawn "A" has been planted and no truffle has yet appeared therein. Truffle has, however, persisted in the beds planted with spawn " B " and these have been entirely free of *Dactylium*. Beds and houses previously planted with spawn "A" have since had spawn " B," and the pattern has not changed. This cuts out the possibility of " carry-over." For some time spawn " B " was given a rest and truffle seemed to vanish from the farm. With the reintroduction of that spawn, truffle has reappeared. There's one exception to the *Dactylium*/spawn "A" trend. This spawn is growing in the Asbestolux-ceilinged house mentioned elsewhere. The house and soil are dry, but the crop is poor. It does seem that certain strains of spawns are less resistant to particular diseases than others, and that the more lively the growth and production of mushrooms, the more that particular disease is likely to flourish. This idea cuts right across my old theory that a lively, vigorous crop is the best insurance against trouble.

As an experiment I am trying half a house with spawns A and B *mixed*. Let them fight it out among themselves. They should provide us with something interesting; either there will be no disease at all or we shall have an entirely new one to excite the scientists. Most new diseases are almost unpronouncable until someone introduces practical sanity into their nomenclature. Our new one might start as *Dactygeotruffle*, improved later to *DT's*.

Nov. 26. When I erected timber houses 16 years ago builder know-alls told me they wouldn't last beyond 9 or 10 years. Yet they still stand, apparently as firm and intact as ever. Most of the bed boards purchased at that time have done 38 crops and only a few are nearing the " replacement " stage. Post-war timber hasn't the same durability.

Nov. 27. Why is it markets are nearly always glutted during the early part of the week? I know Saturday's pick and Sunday's usually go together, but that doesn't explain why there seem to be more mushrooms on the market on Tuesdays and Wednesdays than towards the end of the week. Looked at from our angle, why is it we so seldom have our flushes ready for say Thursday and Friday? Is it the sun, the moon, astrology, washing day, wage day or just sheer bad luck?

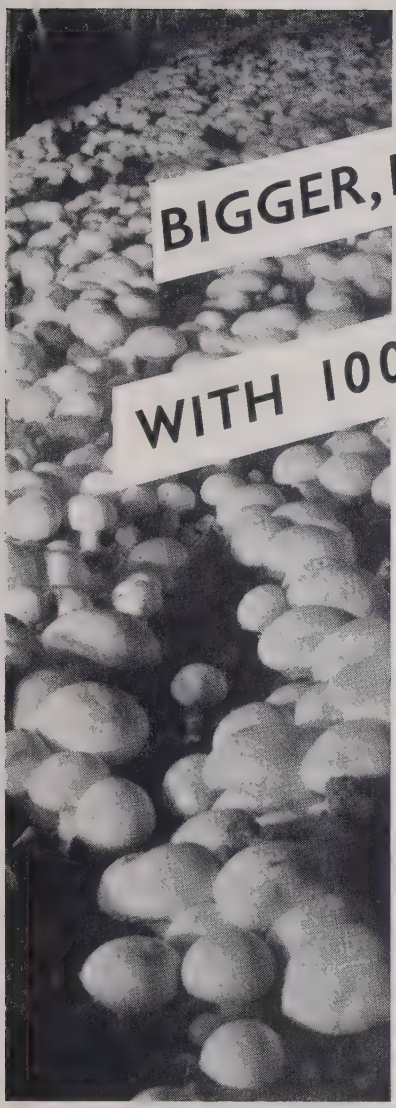
Nov. 28. Extract from a Yorkshire Evening paper: " Dr. Paul Ramain, a country doctor living in the French Alps, has won a £100 gastronomical literary prize for publishing 300 recipes for cooking mushrooms, along with the best wines to accompany them." Sounds astronomical.

Nov. 29. I have no patience with those people who do very small-scale tests—say a square foot here and there. Two reasons. They lack courage and they lack common sense. Courage, because they should be prepared to lose more to gain more definite information. Common sense, because we know from long experience that every sq. ft. of a compost varies. In six tests you might pick six good spots, or six bad ones. Cover a larger area—at the least 100 sq. ft.—and you stand a chance of including all conditions of a given compost.

Dec. 1. I am not happy about item 1 in Stoller's summary in the December Bulletin. It may be less water is needed with peat casing, but I cannot believe that " expertness in watering is not required." I imagine, indeed it's my experience, that a peat casing clogged with mycelium requires very careful handling indeed.

Dec. 3. Further to Nov. 27th above. I've just heard an interesting and not altogether impossible explanation. It is suggested that mushrooms may not like the presence during the working week of human activity and interference. The constant opening and closing of doors, vibrations of walking and of working machinery, the rumblings of passing lorries, and general disturbance and upheaval. Not to mention the possible shocking into activity by the perpetual chatter of gossip and scandal pervading the-er-macroclimate, which may well upset the moral rectitude of even the best-intentioned mushroom. These adverse factors could perhaps cause an activity which builds up production by Saturday or Sunday, or alternatively the weekend rest may be responsible for a rejuvenation that takes until the following weekend to materialise.

Dec. 6. It will be seen that I've bullied the editor into giving me three pages. Why has he submitted so easily? Recently I showed him an article on " Yorkshiremen " in which appeared the following: " He won't accept you easily, but once he has made up his mind about you he will do anything for you." The editor must want me to make up mine *favourably*.



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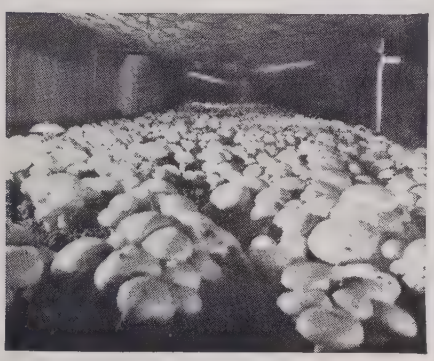

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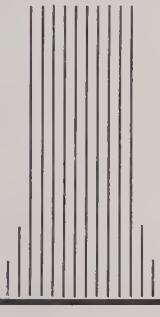

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